

# Influx of the Grey-headed Flying-fox *Pteropus poliocephalus* (Chiroptera: Pteropodidae) to the Melbourne area, Victoria, in 1986

BY HELEN I. ASTON\*

## Introduction

Menkhorst and Dixon (1985) have summarised and mapped the pre-1983 known occurrences of the Grey-headed Flying-fox *Pteropus poliocephalus* in Victoria. They detailed the abnormally large autumn influxes of 1981 and 1982, in which years the number of *P. poliocephalus* in daytime camps in the Royal Botanic Gardens, Melbourne, peaked at about 100 and 800 individuals respectively.

The present paper details the influx of this species to the Melbourne metropolitan area in 1986, when the daytime camp established in the Royal Botanic Gardens was the largest ever recorded for the area, peaking at about 1000 individuals and extending in time well before and after the usual autumn months of prior visitations. Brief comments on known occurrences of the species in Melbourne since 1982 are also made.

## The Royal Botanic Gardens camp

### 1. Numbers and duration

In 1983 no flying-foxes were reported anywhere in Melbourne but in 1984 a daytime camp of about 150 individuals was established throughout autumn in the Fern Gully in the Royal Botanic Gardens (37° 49' S.; 144° 58' E.). Their arrival commenced about the end of March, 10 or 12 first being reported present on 1 April. Numbers built up to a peak in early June, with P. Menkhorst counting 130 and estimating a total of about 150 on 9 June. Numbers then declined, the last sighting, of 8 in-

dividuals, being by W. Schulz on 9 July.

In autumn-winter of 1985 flying-foxes were absent but in 1986 the largest known influx for the Melbourne metropolitan area occurred and extended for the longest duration yet recorded. The daytime camp for this influx was again in the Fern Gully of the Royal Botanic Gardens. K. Allen and D. Churchill first noticed about 12 *Pteropus* present on 22 December 1985. Numbers remained small until mid January 1986 when a steep rise commenced and continued at least into February (Fig. 1). No counts were made between 2 February and 7 May 1986 but general observations indicated that the peak of approximately 1000 individuals was held from at least late March to mid April. A decline in numbers (observations by K. Allen) had occurred apparently 3 or 4 weeks before 12 May when a count of 925 flying-foxes was obtained during a branch-by-branch count through the gully. Numbers dropped steeply in the last half of May and less steeply but steadily throughout June to mid September. The last individuals to desert the camp left on 20 or 21 September. However, 10 to 15 remained until early December, when they were joined by new arrivals. Counts of 18 to 20 and of 39 were made on 1 and 12 December respectively. This increase in numbers could be the commencement of an influx for 1987 and raises the possibility that a permanent camp of *P. poliocephalus* may become established in the Royal Botanic Gardens.

First arrivals in 1981, 1982 and 1984 were in late March, early March and late March respectively. Last departures for the same years were mid July (with most gone by late June), early June and early

\*7/5 Hazel Street, Camberwell, Victoria 3124.

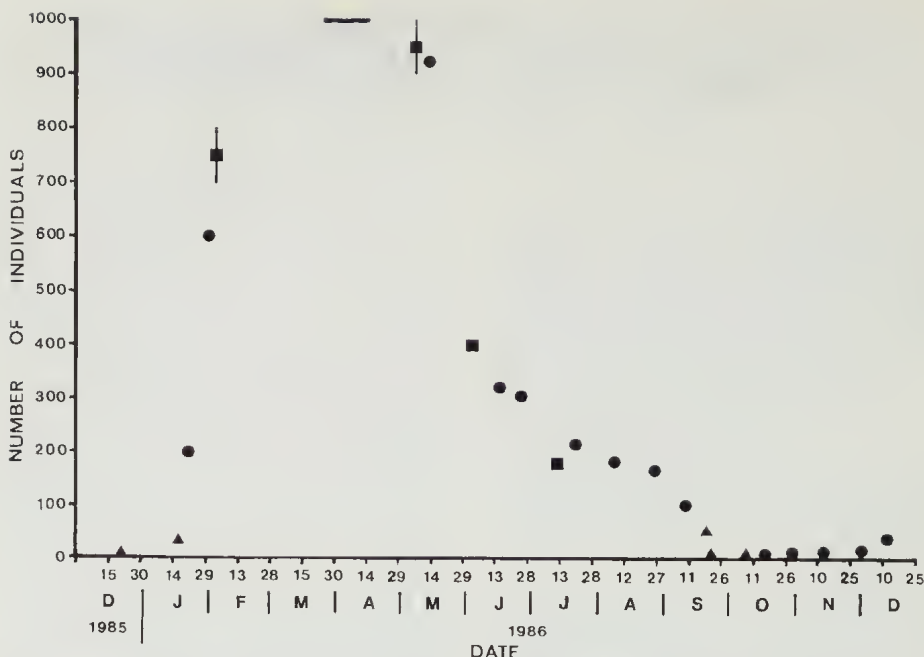


Fig. 1. Numbers of *Pteropus poliocephalus* at the Royal Botanic Gardens camp during 1986. ● = counts by H. Aston; ■ = midpoints of estimates by P. Menkhorst (range shown by vertical line); ▲ = estimates by others; — = peak estimated by K. Allen.

July respectively. The period of the 1986 influx from late December 1985 to late September 1986, with a few individuals remaining until at least mid December, was therefore quite abnormally extended. The year 1986 is the first for which *P. poliocephalus* has been recorded in the Royal Botanic Gardens throughout every month.

## 2. Camp site

The Fern Gully is approximately 140 metres long and 55 metres wide. During the peak of 1986 influx *P. poliocephalus* camped in groups dispersed throughout most of the gully but chiefly in the northern two-thirds of it. The camp occupied an area of about 4,500 square metres, with an average density of c. 0.22 individuals per square metre.

The camp first established in the northern end of the gully, expanding

southwards along its full length as numbers increased and contracting back to the extreme northern end as numbers declined. On 12 May 1986, when the highest count of 925 was made shortly after the peak, dispersal was still throughout most of the gully with the flying-foxes in 29 groups of from 1 to 99 (mostly 4-58) individuals per group. By 16 June, with numbers decreased to 325, the flying-foxes were concentrated in only four trees at the extreme northern end of the gully and by 25 June all (c. 305) had concentrated further into only two of these trees. The same two trees remained the major camp trees from then until 20 or 21 September, with several palms also occasionally being used by a few individuals. One of these palms was adopted as the sole camp site by the 20 or less *P. poliocephalus* which

remained after 20 or 21 September.

Large trees of Moreton Bay Fig *Ficus macrophylla*, Elm *Ulmus* spp., Plane *Platanus* sp., White Poplar *Populus alba*, Lilly-pilly *Acmena smithii* and River She-oak *Casuarina cunninghamiana* and also tall palms were heavily utilised either throughout or for a notable portion of the camp period. Both evergreen and deciduous trees were used, the latter during all stages from heavily-foliaged to leafless.

### 3. Effect of weather

Contraction of the camp as numbers declined was presumably due to the gregariousness of the species but the selection of the final site of four, then two, trees at the north end of the gully appeared to be influenced by weather. *Pteropus poliocephalus* normally inhabits warmer locations than Melbourne and, when it does visit this area, departs soon after the coldest period from June to August has begun. Individuals remaining throughout winter during the 1986 influx therefore could be expected to seek warmth and the trees at the north end of the gully were well-placed to receive any sunshine available.

Table 1 gives the numbers of *Pteropus* present in the final northern camp site and the minimum and maximum temperatures for eight days on which

counts were made during June to August 1986. On 16 June, with the temperature nearly 17°C, approximately 72% of the 325 individuals were in the leafless or near-leafless sections of three deciduous trees, mostly in sunny positions. The remainder were generally in shade in an adjacent, heavily-foliaged, Moreton Bay Fig. Nine days later, on 25 June, following colder weather (maximum temperature 11°-12°C over the previous five days), the camp had contracted to only one of the deciduous trees, a White Poplar, and the fig tree. The number of flying-foxes had not decreased markedly and more individuals had moved to the fig, only c. 51% remaining in the poplar. As winter progressed, numbers in the poplar dropped further, ranging from about 33%-44% on fairly calm, mild, and more or less sunny days. However, on 14 and 25 July the poplar was completely deserted and all individuals camped in the fig. The 14 July was extremely windy with whole trees in motion and the 25 July was cold (maximum temperature 8°C) with rain and sleet. The dense foliage of the fig was obviously sought for shelter in adverse weather whereas the bare branches of the poplar were utilised for warmth in sunnier, milder weather.

Date	Number of <i>P. poliocephalus</i> present		Per cent present in Poplar	Temperature (deg. C.)	
	Fig	Poplar		Min.	Max.
1986					
16 June	90	235*	72%	6.9	16.8
25 June	150	155	51%	6.0	13.6
14 July	all	nil	0%	4.4	15.0
21 July	112	88	44%	8.8	14.9
25 July	all	nil	0%	2.5	8.2
8 August	114	70	38%	3.5	16.6
22 August	about 2/3 of total	about 1/3 of total	c.33%	9.7	21.0
27 August	103	65	39%	7.5	17.7

Table 1. Numbers of *Pteropus poliocephalus* present in an evergreen Moreton Bay Fig and a leafless White Poplar, together with minimum and maximum temperatures, on eight occasions during June to August, 1986. (\* = three leafless trees used, thereafter one only.)

## Other Melbourne occurrences

### 1. Night dispersal

There were no reports of *Pteropus* in the Melbourne metropolitan area in 1983 and 1985 but, coinciding with the daytime camps in the Royal Botanic Gardens, there were reports in 1984 and 1986 of night flying and feeding in suburban Melbourne. No other camps were reported and the night dispersals presumably originated from the Gardens camp.

Between mid March and 6 May 1984, occasional sightings of from 1 to 12 flying foxes were reported from Northcote, North Fitzroy and Kew, all locations being less than 8 kilometres in north to north-easterly directions from the Royal Botanic Gardens.

In 1986, fourteen night sightings of from 1 to 20+ individuals extended from 26 January to 4 July. Reports were from Albert Park, East Melbourne, North Fitzroy, Richmond, Kew, Hawthorn and Canterbury. All locations were within 2 to 10 kilometres of the Royal Botanic Gardens and all except Albert Park, south-west of the Gardens, were in north to easterly directions from them.

The 1984 and 1986 records are consistent with the findings of Menkhorst and Dixon (1985), who reported that 78% of foraging records came from within a 10 kilometres radius of the Royal Botanic Gardens and that directions of dispersal were wide, although concentrated in the eastern and south-eastern suburbs.

### 2. Feeding

Flying-foxes were reported at night feeding on Moreton Bay Figs, cultivated figs, apricots and apples. Individuals apparently return regularly to the same food source each night over a period of several weeks if the food source persists. For example, Ms Kramer reported 3 to 5 regularly present each night from 5 February to mid March 1986 feeding on

cultivated figs and apricots at a house in Holden Street North Fitzroy, and Pauline Duncan reported 20+ individuals feeding in a Moreton Bay Fig in Richmond on 20 January, 21 January and 11 February 1986.

Audrey Wain made regular observations of flying-foxes feeding in a large Moreton Bay Fig in Burke Road, Hawthorn, between 26 January and 9 February 1986. They would arrive between 21:25 and 21:30 hours eastern summer time and mostly depart about 03:00. On the nights of 29 and 30 January at least 20 individuals were present, flying in from the direction of the Royal Botanic Gardens, i.e. from the west to south-west. By 5 and 6 February the number had decreased to a maximum of 10 to 12 and the arrival was more from the north-west to north. Only a few individuals appeared on the next three nights and none visited the fig after 9 February, probably because of depletion of food supply.

On 5 February 1986, at about 21:00 hours eastern summer time on a hot evening (maximum day temperature 26°C), Kathy Preece observed flying-foxes streaming out of the Royal Botanic Gardens. Many flew to the adjacent Yarra River and drank by skimming the surface with their mouth open.

## Victoria outside Melbourne

There have been few reports of *P. poliocephalus* in Victoria for 1983 to 1986 inclusive apart from scattered East Gippsland sightings of small numbers. The regular autumn camp site at Dowell Creek, near Mallacoota Inlet, East Gippsland (Menkhorst and Dixon, 1985) has not been checked but it is probably still in use. The most interesting record is of one individual electrocuted on power lines on the outskirts of Cobden (38° 20' S.; 143° 04' E.) on 30 January 1986. It is unusual for this species to extend so far west, especially in summer.



### Acknowledgements

I particularly thank Peter Menkhorst, Arthur Rylah Institute of Environmental Research, Department of Conservation, Forests and Lands, for making sundry records including his own counts at the Royal Botanic Gardens available to me, and for commenting on this manuscript. Ken Allen, Michael Burston, Warren Worboys and Colin Pratt, Royal Botanic Gardens, have also been particularly helpful in observations within the Gardens during 1986 and Bill

Schulz made regular Gardens counts in 1984. To them and to others whose records have been incorporated in this account, I am most grateful.

### REFERENCE

Menkhorst, P. W. and Dixon J. M., (1985). Influxes of the Grey-headed Flying-fox *Pteropus poliocephalus* (Chiroptera, Pteropodidae) to Victoria in 1981 and 1982. *Australian Mammal.* 8: 117-121.

---

## Nature Notes

### A Boobook (*Ninox novaeseelandiae*) preying on an Eastern Rosella (*Platycercus eximius*).

BY M. J. LEWIS\*

On the 13 May 1986 at the Australian National University, Canberra, I was walking across from the Zoology Department to the Hancock Library at 1930 hours when I heard the distress calls of a Rosella. As I turned to approach the area from where the calls had originated an Eastern Rosella (*Platycercus eximius*) flew straight towards me about 40cm above the ground, with a Boobook Owl (*Ninox novaeseelandiae*) in pursuit about 2 metres behind. The Rosella landed on a footpath about 10 metres away and the owl in a nearby tree. My presence obviously disturbed the owl's pursuit.

I approached to within about 1 metre of the exhausted female Rosella and observed that its back was devoid of

feathers and bloody, obviously having already been attacked by the owl and having escaped. After a few moments the Rosella flew off, low above the ground, with the owl again in pursuit.

Boobooks primarily feed on insects and occasionally small marsupials and rodents but have also been known to prey on birds up to the size of small parrots (Schodde and Mason 1980, Vestjens 1973). As Schodde et. al. (1980) note this is probably not a common event but with insect activity becoming low, as would be the case in Canberra during this period of the year, birds may form an important source of protein.

### REFERENCES

Schodde, R. and Mason, I. J., (1980) *Nocturnal Birds of Australia*. Melbourne: Lansdowne.  
Vestjens, W. J. M., (1973). Wildlife Mortality on a road in New South Wales. *Emu* 73: 107-112.

\* Zoology Department, Australian National University.  
P.O. Box 4, Canberra, 2601.